

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P546691

Luminaire Tested: **FMR-24-4-LD4-2HI-35-UNV-81-88-EDD**

Issue Date: 6/15/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



**Test Information**

Test Method: LM-79-08  
Report Number: P546691  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 6/15/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-24-4-LD4-2HI-35-UNV-81-88-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

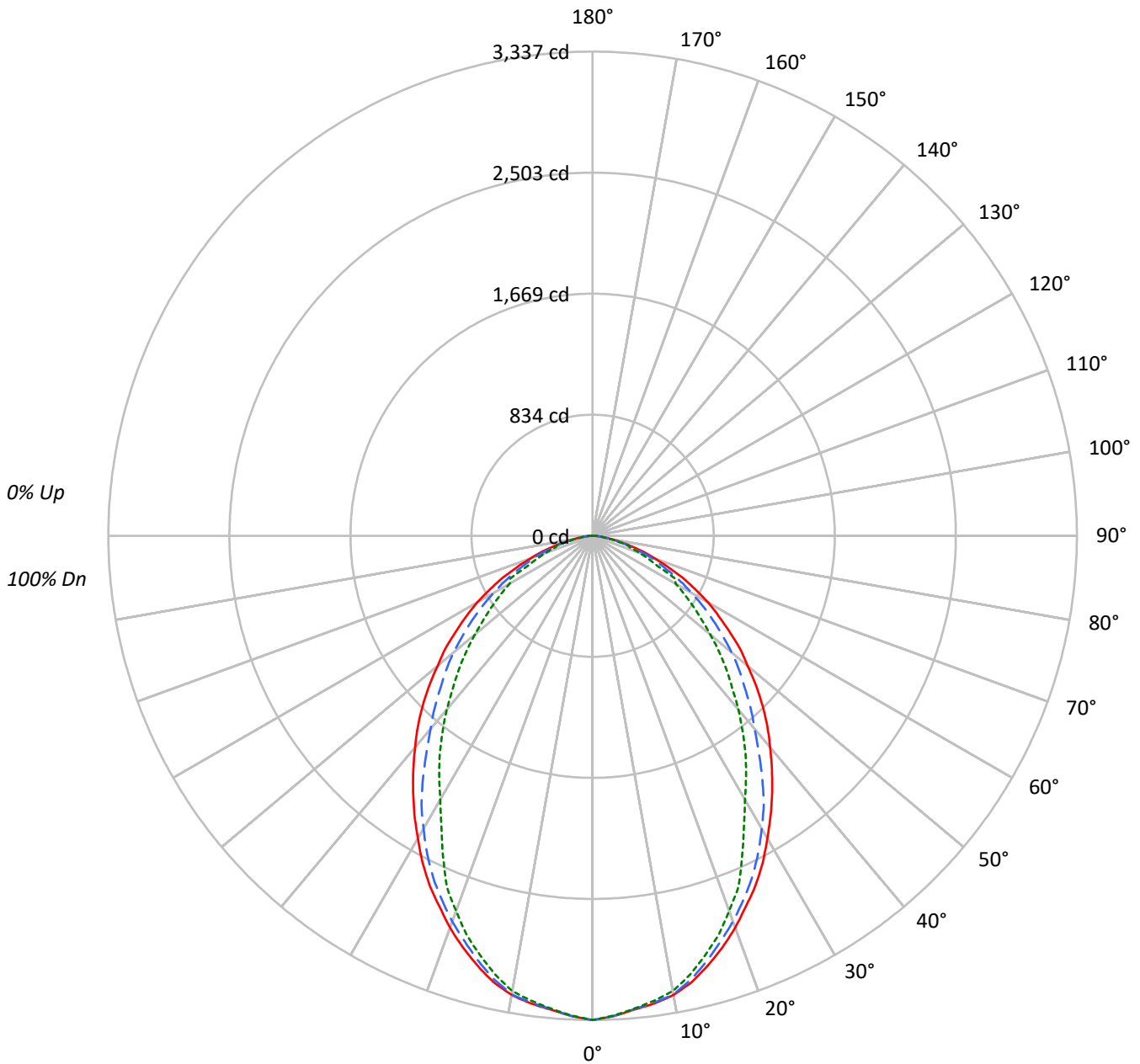
Lumens per Lamp: N/A  
Luminaire Lumens: 6551.0 lumens  
Efficiency: N/A  
Efficacy: 75.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 86.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4490	4490	4490
5°	4429	4424	4418
10°	4390	4385	4354
15°	4272	4229	4170
20°	4115	4049	3938
25°	3946	3860	3620
30°	3740	3620	3260
35°	3542	3346	3016
40°	3341	3049	2744
45°	3149	2819	2481
50°	2915	2616	2213
55°	2697	2371	1982
60°	2471	2118	1775
65°	2174	1855	1572
70°	1791	1624	1336
75°	1424	1243	1304
80°	956	896	837
85°	596	715	834



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	310.6	4.7
10°-20°	852.5	13.0
20°-30°	1180.2	18.0
30°-40°	1258.5	19.2
40°-50°	1148.1	17.5
50°-60°	899.4	13.7
60°-70°	586.2	8.9
70°-80°	259.7	4.0
80°-90°	55.8	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2343.3	35.8
0°-40°	3601.8	55.0
0°-60°	5649.3	86.2
0°-90°	6551.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6551.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3337	3337	3337	3337	3337	
5°	3279	3275	3275	3271	3271	311
15°	3067	3067	3036	3005	2994	862
25°	2658	2643	2600	2508	2438	1220
35°	2156	2141	2037	1883	1836	1348
45°	1655	1620	1481	1358	1304	1275
55°	1150	1115	1011	891	845	1031
65°	683	644	582	594	494	673
75°	274	255	239	228	251	294
85°	39	42	46	50	54	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3337.0	3337.0	3337.0	3337.0	3337.0
2.5°	3313.8	3313.8	3313.8	3310.0	3310.0
5°	3279.1	3275.3	3275.3	3271.4	3271.4
7.5°	3252.1	3248.3	3244.4	3240.5	3232.8
10°	3213.5	3213.5	3209.7	3190.4	3186.5
12.5°	3151.8	3148.0	3132.5	3105.5	3097.8
15°	3066.9	3066.9	3036.1	3005.2	2993.6
17.5°	2974.4	2970.5	2931.9	2901.1	2885.6
20°	2874.1	2866.3	2827.8	2777.6	2750.6
22.5°	2762.2	2762.2	2715.9	2650.3	2623.3
25°	2658.0	2642.6	2600.2	2507.6	2438.1
27.5°	2538.4	2515.3	2469.0	2337.8	2256.8
30°	2407.3	2395.7	2330.1	2160.4	2098.6
32.5°	2283.8	2264.5	2195.1	2017.6	1967.5
35°	2156.5	2141.1	2036.9	1882.6	1836.3
37.5°	2029.2	2009.9	1878.7	1755.3	1697.4
40°	1901.9	1878.7	1736.0	1624.1	1562.4
42.5°	1782.3	1751.4	1612.6	1493.0	1423.5
45°	1655.0	1620.3	1481.4	1357.9	1303.9
47.5°	1527.7	1496.8	1369.5	1242.2	1180.5
50°	1392.7	1365.7	1249.9	1122.6	1057.0
52.5°	1280.8	1238.4	1126.5	999.2	945.2
55°	1149.6	1114.9	1010.7	891.2	844.9
57.5°	1030.0	995.3	898.9	787.0	748.4
60°	918.2	868.0	787.0	690.5	659.7
62.5°	794.7	756.1	686.7	605.7	644.3
65°	682.8	644.3	582.5	594.1	493.8
67.5°	559.4	540.1	486.1	432.1	416.6
70°	455.2	432.1	412.8	354.9	339.5
72.5°	362.6	339.5	312.5	281.6	270.0
75°	273.9	254.6	239.2	227.6	250.8
77.5°	189.0	181.3	169.7	158.2	154.3
80°	123.4	119.6	115.7	111.9	108.0
82.5°	73.3	73.3	73.3	73.3	73.3
85°	38.6	42.4	46.3	50.2	54.0
87.5°	23.1	23.1	27.0	30.9	34.7
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By 670246072 / DESKTOP-MV3F9LC







— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)